TELETEXT COLOUR BOARD. Construction and Modifications.

As designed the board generates 4 x colour subcarrier frequency (17.734475 MHz) then divides it by 130 in IC 28 and IC 21. Another oscillator generates 6 MHz (IC 33) which is divided by 44 in IC 30 and IC 38. These two resultant frequencies were to be compared in IC 34 which derived a D.C. component to control the 6 MHz oscillator.

Iq the modified circuit the 4 x subcarrier is divided by 141.8758 (on a new piggy-back sub-board) and then compared in IC 34 with the 6MHz which has now been divided by 48 in IC 30 and IC 38 (instead of 44). The comparison frequency is now 8 x line frequency so that the 6MHz oscillator runs at 1.3532963 times the subcarrier frequency. This is the correct relationship to give the 25 Hz offset that the PAL system requires.

The new divider board takes the 17.734475 from header plug (pin 2) which occupies the socket of the no longer used IC28. Output of the divider board returns to the header plug (pin 5). The board itself should be mounted piggy-back on to the colour board so as to keep its connection leads as short as possible.

There is also a change to the division ratio of divider IC30 by connecting pin 3 to 0v instead of +5v. The divider IG21 is no longer used at all. The "jitter component" from comparator IC34 is removed by R9 and C2 whose values have been changed from the original circuit.

After construction of the board and sub-board they should be set up as follows:-

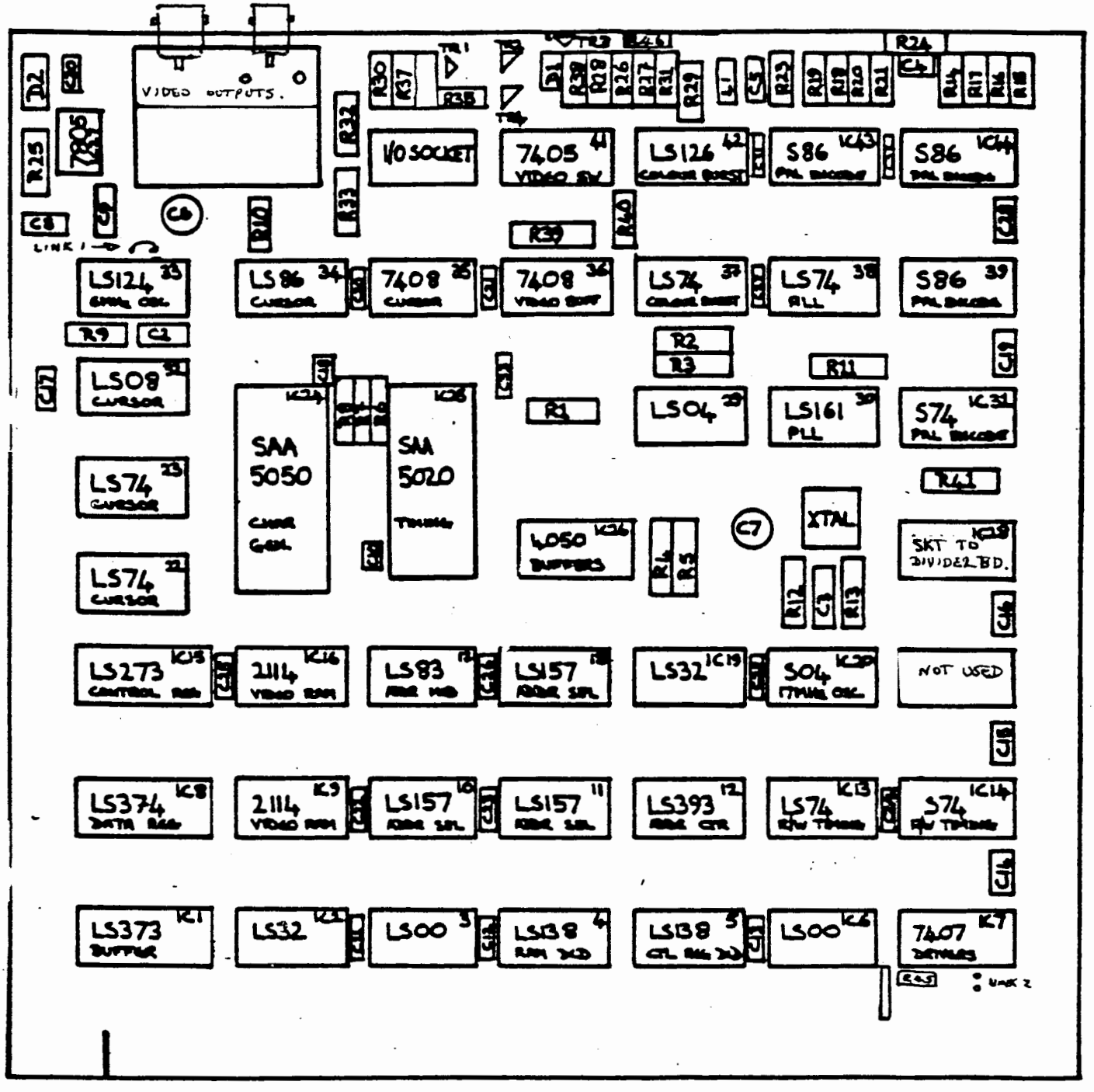
1. Using a local source of sub-carrier as reference, adjust C7 to produce an exact 4 x sub-carrier entering the piggy-back board. If necessary add a small value capacitor across C7 to bring the frequency within range.
2. On the divider board check that waveforms C and D are of the type shown.
3. Inspect the two inputs to IC34 and adjust C6 to bring them to a similar rate. It may be necessary to add 5 or 10pf to C6 to bring within range. Further adjustment of C6 should lock the picture. If the jitter persists reducing the value of R9 to 47k will help.

Diagrams of the main and divider boards are provided plus principal component lists and photographs of the main board layout.

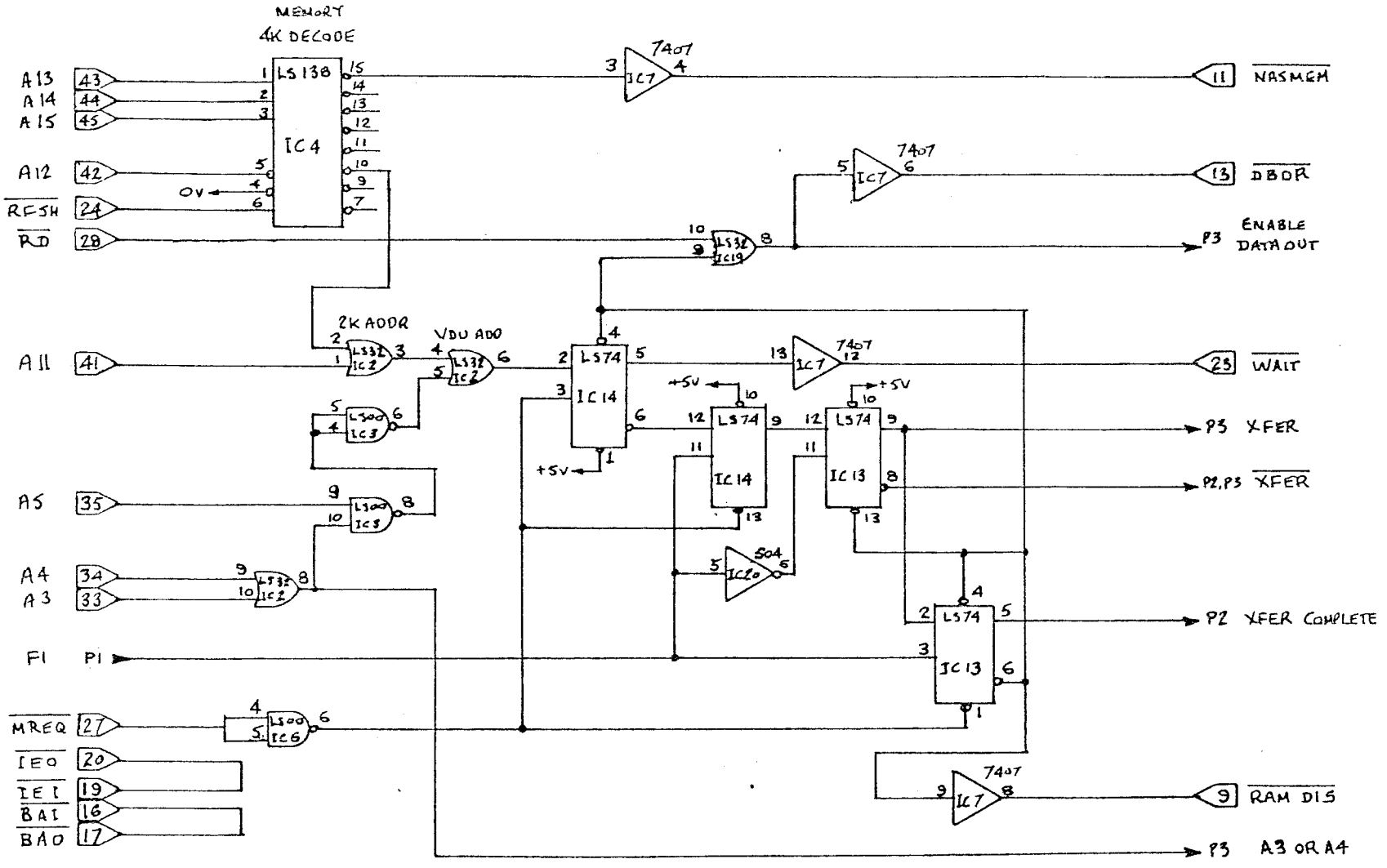
Divider Sub-board Components.

IC	Type	No. of pins.	Capacitors.
1	ALS160	16pin	Between each IC 10nf
2	ALS160	16pin	Reservoir 33uF (T)
3	LS160	16pin	
4	LS160	16pin	
5	74161	16pin	
6	LS160	16pin	
7	LS90	14pin	
8	LS04	14pin	
9	LS32	14pin	
10	LS04	14pin	

(continued)



Title WT625 COMPONENT LAYOUT					
PN	Sheet 1 of 1	Issue	1 12/2/80	2 18/3/80	
Drawn SW	Checked	3 D-SEEK 8-10-86	4	5	



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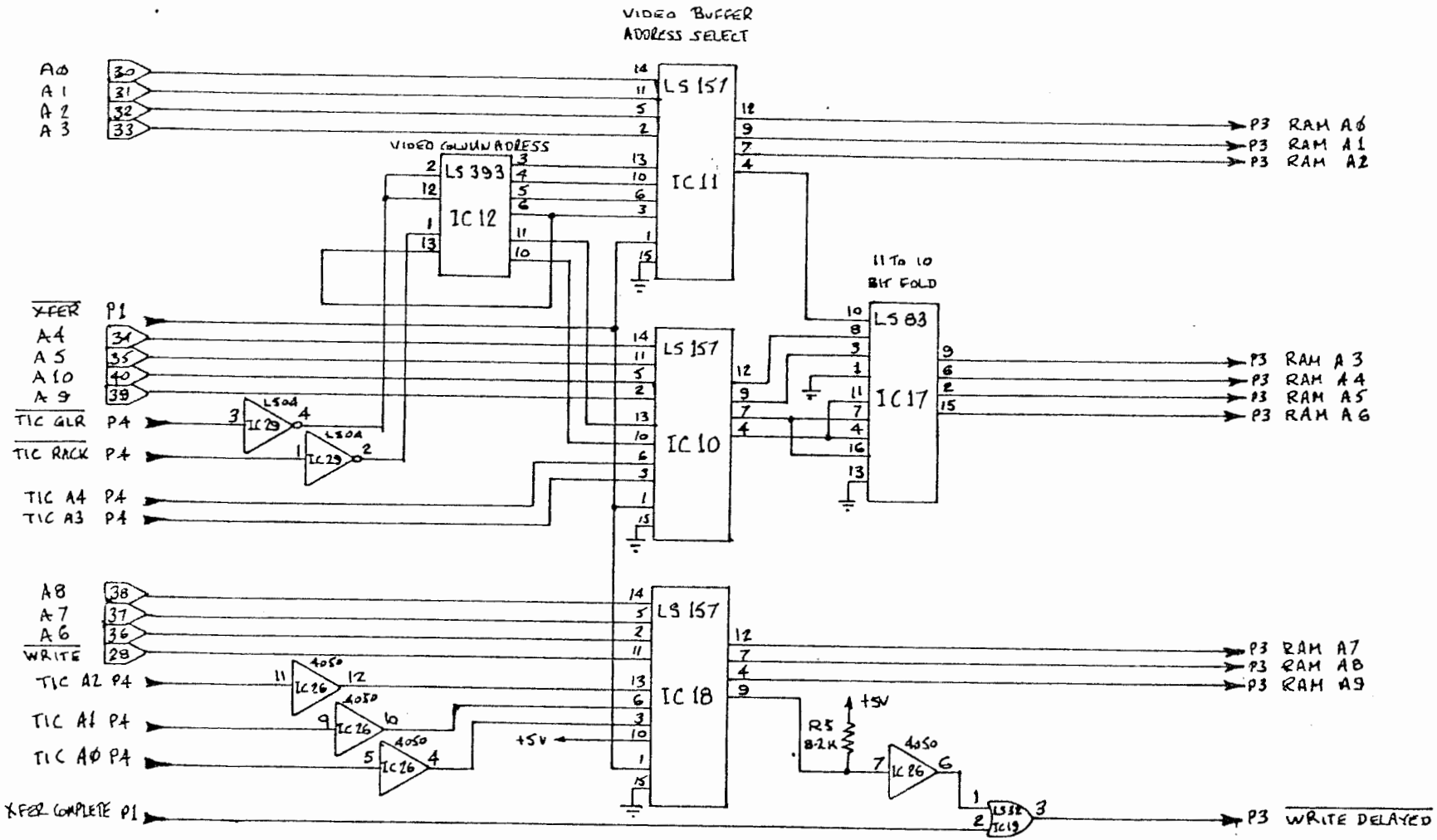
TELETEXT COLOUR GRAPHICS BOARD	PAGE 1 OF 8



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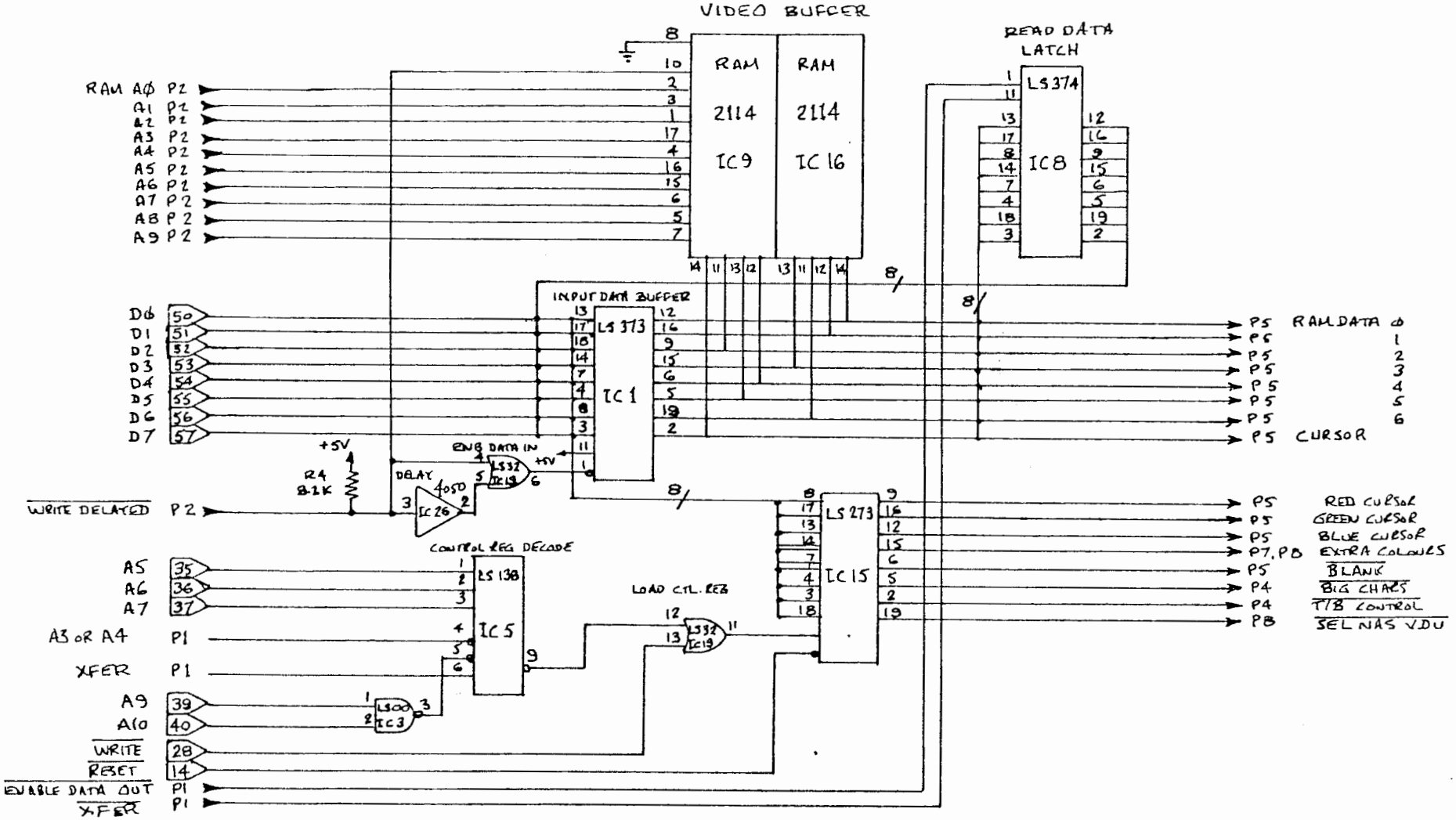
TELETEXT COLOUR GRAPHICS BOARD	PAGE 2 OF 8



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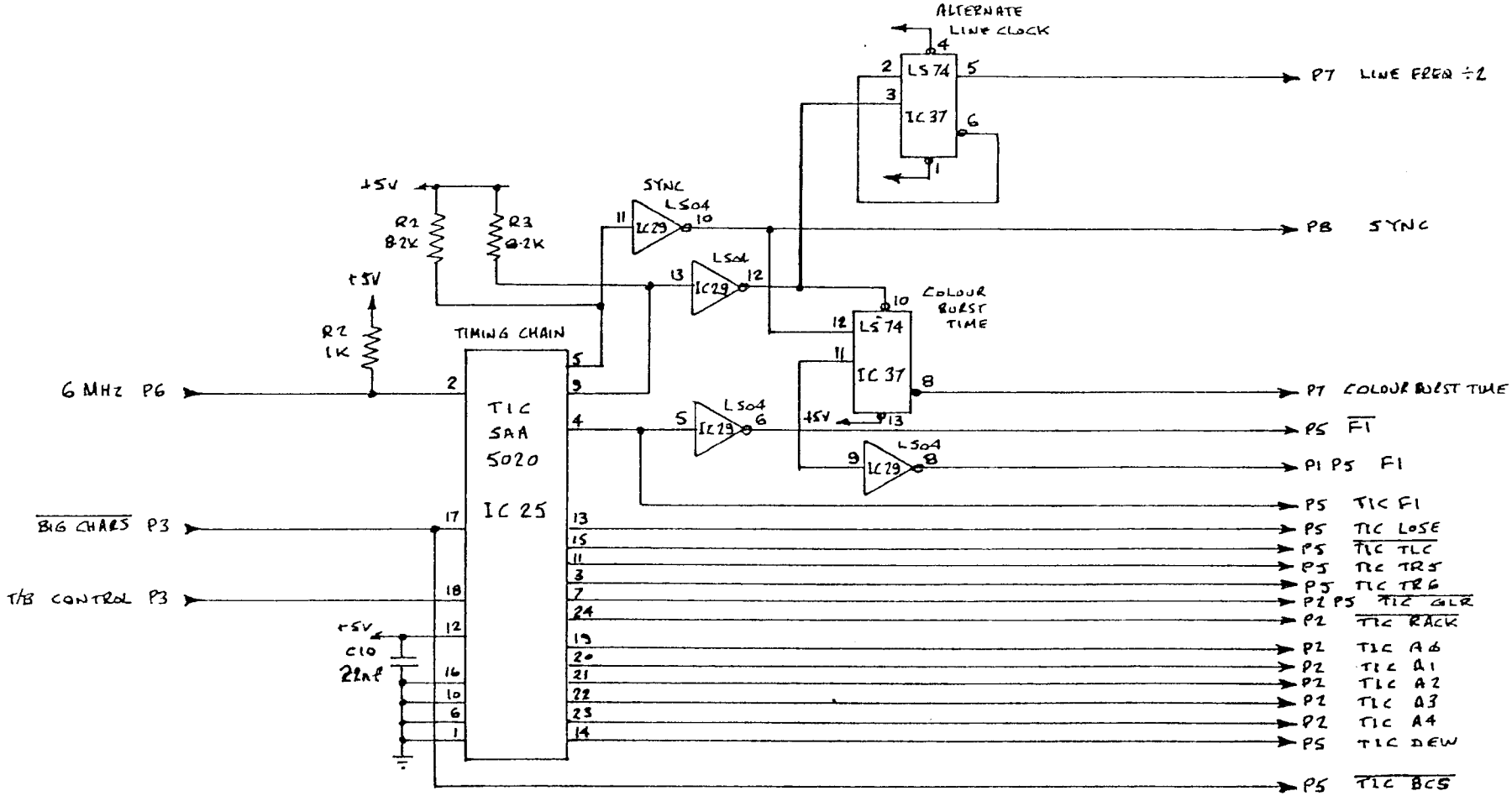
TELETEXT COLOUR GRAPHICS BOARD	PAGE 3 OF 8



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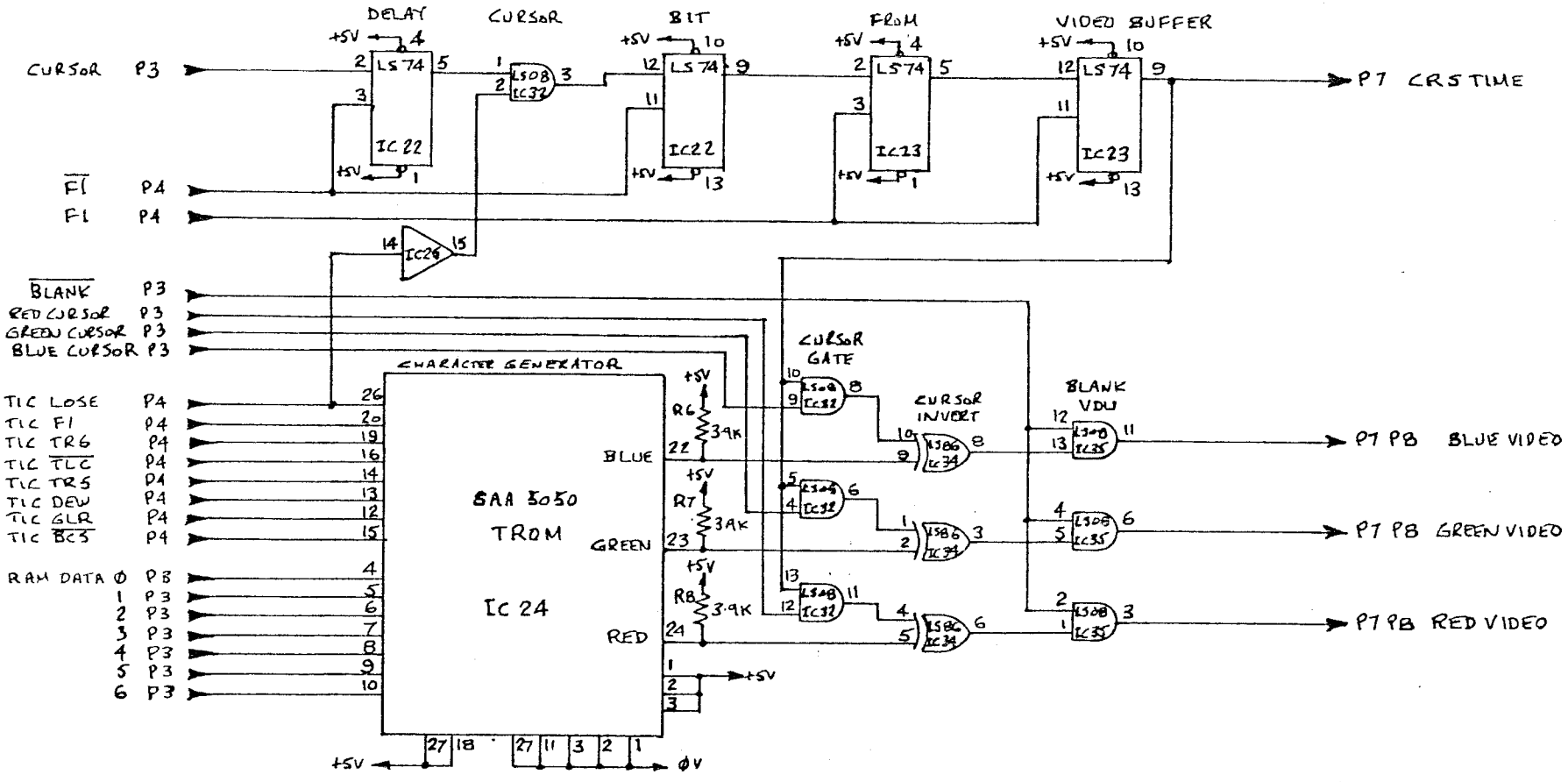
TELETEXT COLOUR GRAPHICS BOARD	PAGE 4 OF 8



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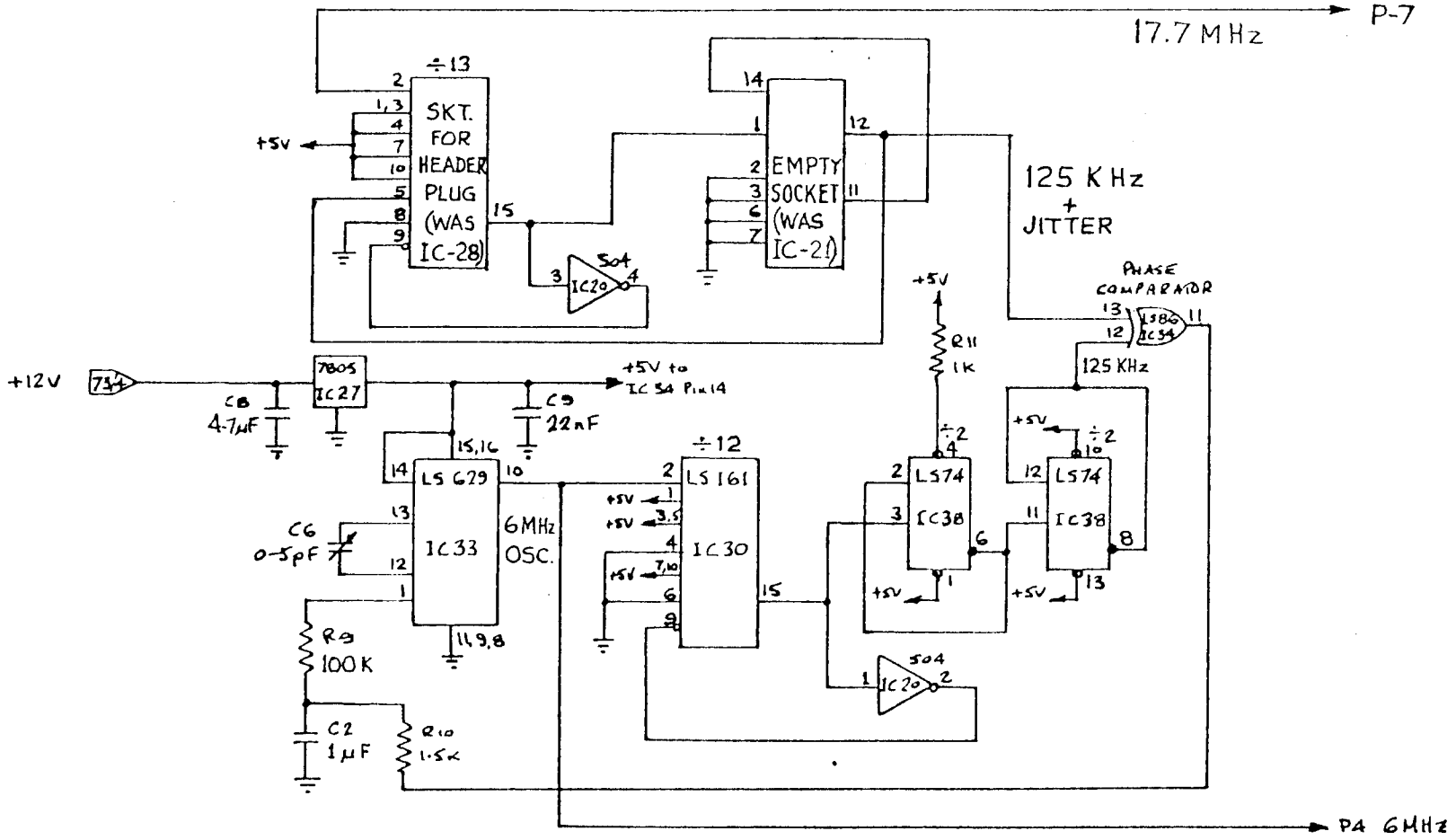
TELETEXT COLOUR GRAPHICS BOARD	PAGE 5 OF 8



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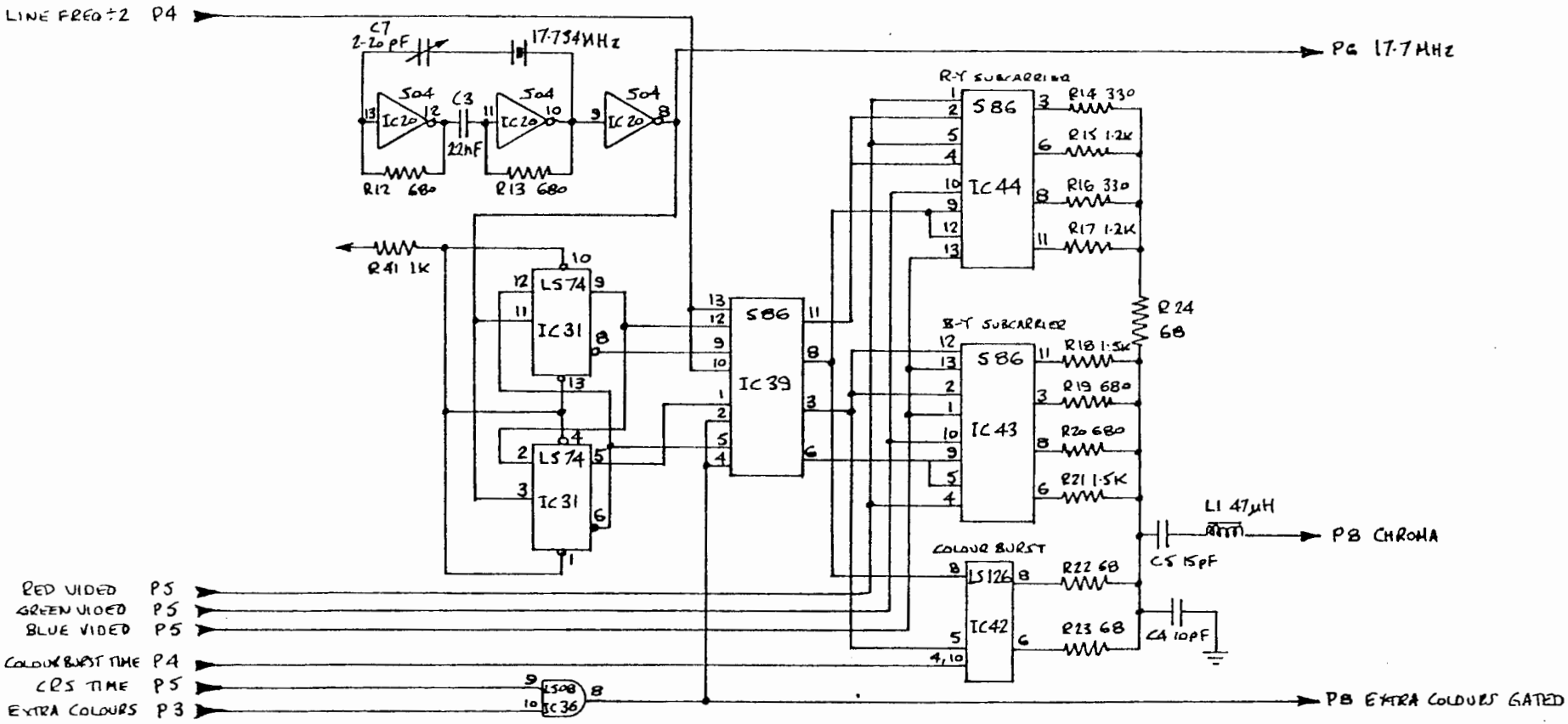
TELETEXT COLOUR GRAPHICS BOARD	PAGE 6 OF 8



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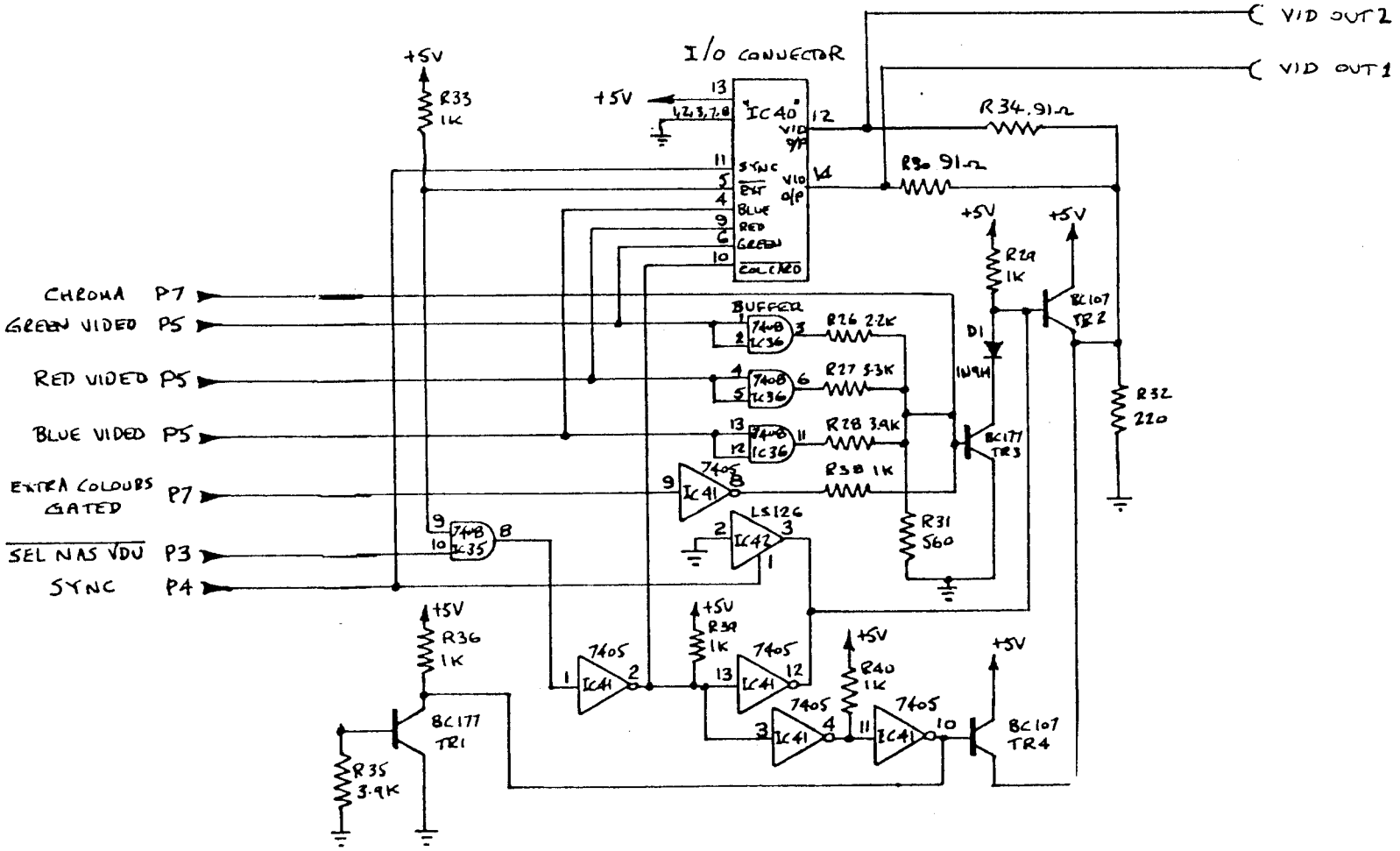
TELETEXT COLOUR GRAPHICS BOARD	PAGE 7 OF 8



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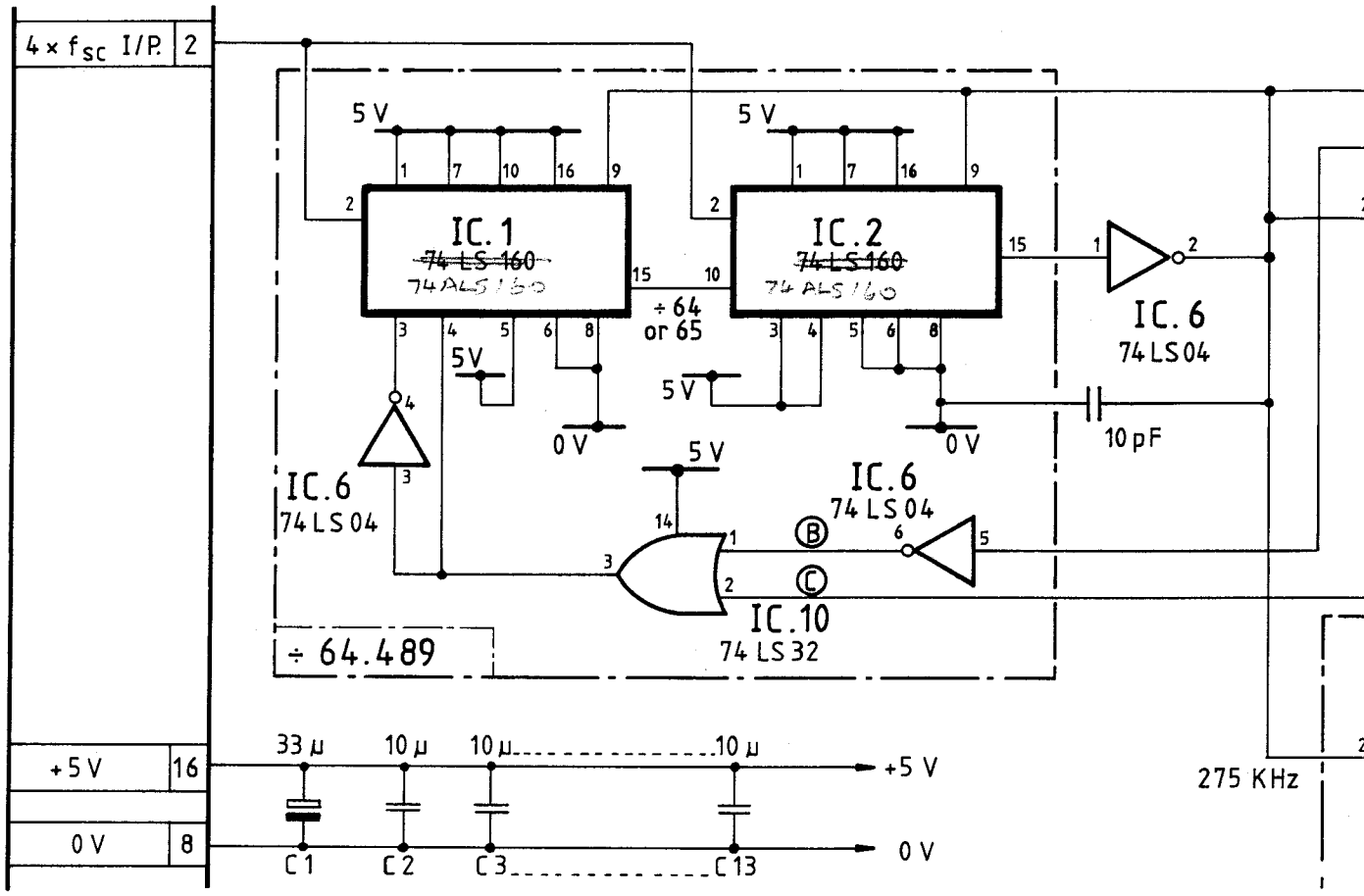
TELETEXT COLOUR GRAPHICS BOARD	PAGE 8 OF 8

SKT - 1



I/C NO.	DEVICE	FUNCTION	VCC VDD	OV VSS	CX
1, 2	74 ALS 160				
3, 4, 7	74 LS 160	Sync. Decade Count.	16	8	10 n
5	74161	Sync. Binary Count'n.	16	8	10 n
6,9	74 LS 04	6 × Inverter.	14	7	10 n
8	74 LS 90	Decade Counter.	14	7	10 n
10	74 LS 32	4×2 I/P. OR Gate.	14	7	10 n

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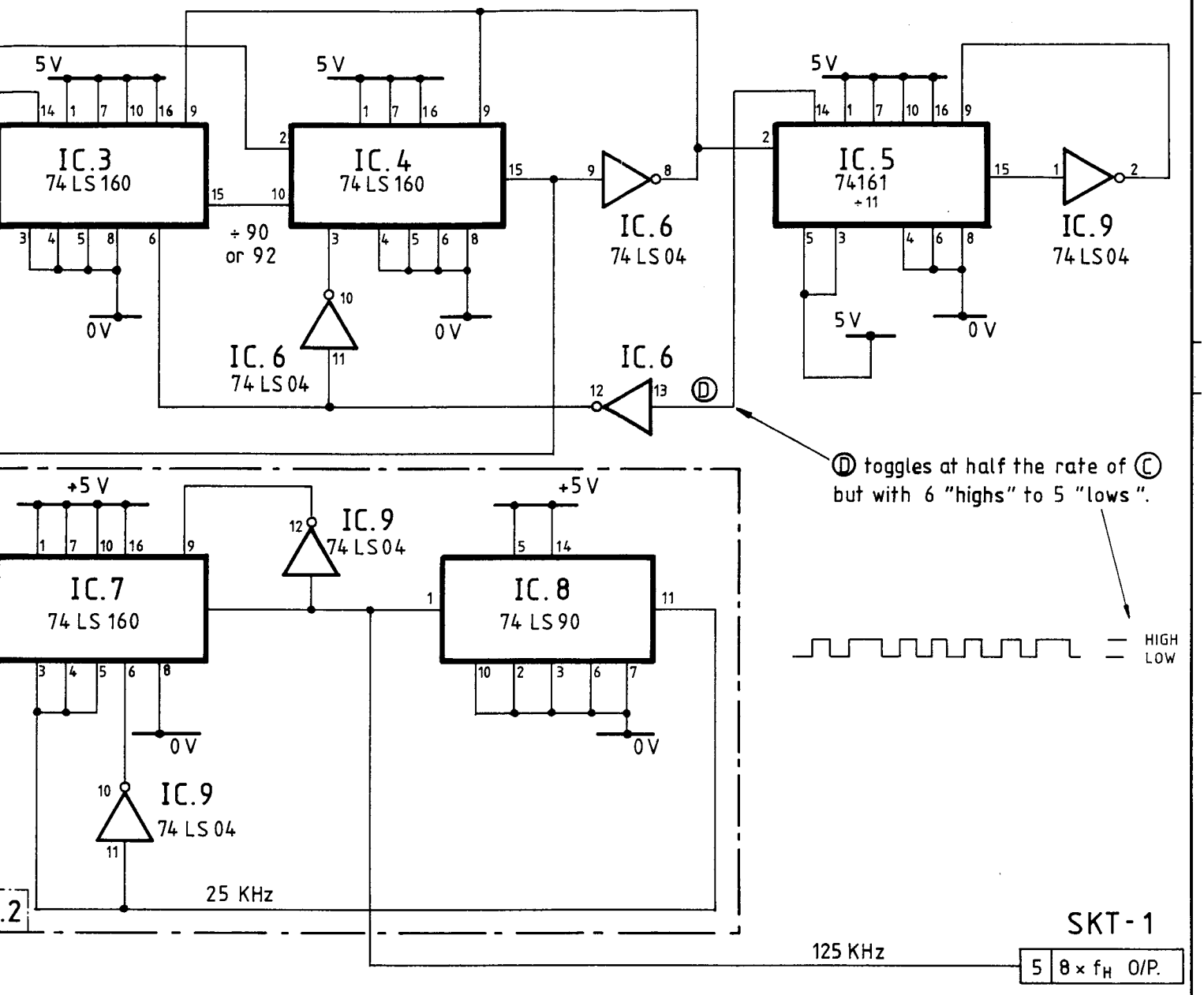
SHEET 1 OF 1



UIT DERIVES 8 × LINE FREQUENCY FROM 4 × SUBCARRIER FREQUENCY.

SION RATIO IS $\frac{1}{64.489}$ IN TOP SECTION.

THER DIVISION OF 2.2 IN LOWER SECTION, i.e., $\frac{1}{2.2 \times 64.489}$

ISSUES	
01	16 DEC 85.
02	27 MAR 86.
3	6 to 22

Solly Systems Ltd
HAMPSHIRE ENGLAND

FIRST USED ON
1059 —— Electronic
Chassis —— Teletext
Colour Graphics Board
——Divider Sub-Board.

TITLE OF DRAWING
CIRCUIT DIAGRAM
(4 × Subcarrier
to 8 × Synch.)

DRAWING NUMBER

SIZE.	PROJECT.	ASSY.	No.	ISSUE
C.	1059	- 40 -	040/	02

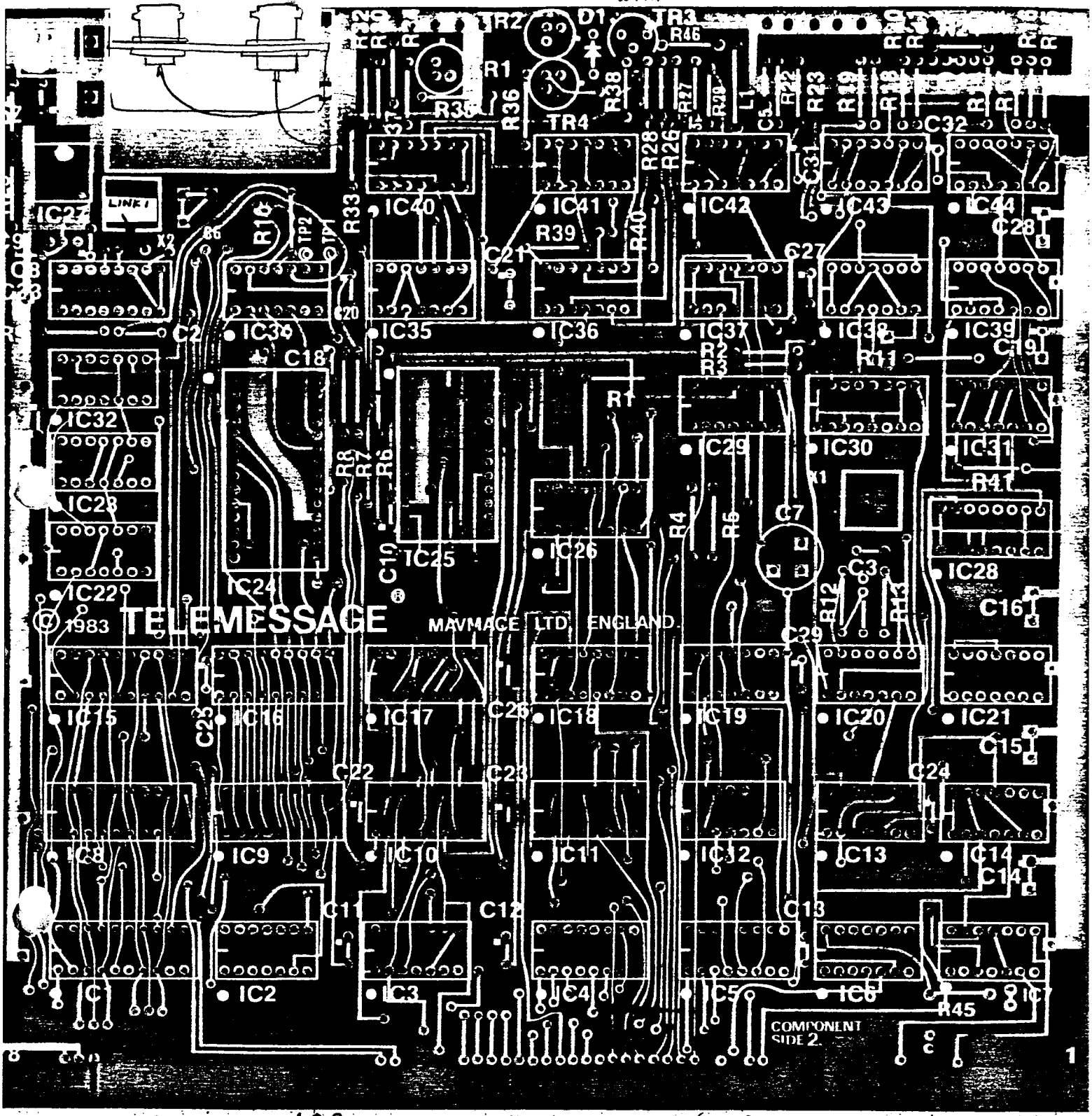
SHEET No. 1 OF 1

A2/A3

MODIFICATIONS TO COLOUR BOARD

OMIT MODULATOR AND REPLACE IT WITH BRACKET HOLDING BNC SOCKETS

REPLACE R46 WITH LINK 3



IC 30 CUT TRACK GOING TO PIN 3 (ONLY)
IC 30 CONNECT PIN 3 TO 0V.
IC 28 CUT TRACK GOING TO PIN 5 (ONLY)
IC 28 CONNECT PIN 5 TO IC 21 PIN 12

LINK 2 IS BELOW IC7
OMIT THIS LINK AND
ALSO OMIT R45

2 6-10-88
ISSUE 1 ~~30-3-85~~